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CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC
1420 FIFTH AVENUE
SUITE 2800
SEATTLE, WA 98101-2347

EXAMINER
BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
1771	7

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/815,933	GRAEF ET AL.	
	Examiner	Art Unit	
	Jennifer A Boyd	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-107* is/are pending in the application.

4a) Of the above claim(s) *80-107* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-79* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1 - 79, drawn to an absorbent composite and article, classified in class 442, subclass 327.

II. Claims 80 – 107, drawn to a method for forming a fibrous web, classified in class 162, subclass various.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as laminating.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with George Renzoni on February 20, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-79. Affirmation of this election must be made by applicant in replying to this Office action. Claims 80 – 107 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1 – 16, 19 – 25, 32 – 53, 62 – 69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954).

Wanek is directed to a multi-layer absorbent composite which is useful in personal care products (column 1, lines 5 – 9).

As to claim 1, Wanek teaches an absorbent composite comprising first and second surge management layers and an absorbent layer located between said first and second surge management layers (Abstract). The first and second surge management layers are equated to the Applicant's "first stratum" and "third stratum" respectively and the absorbent layer is equated to the Applicant's "second stratum". Wanek teaches that the first surge management layer comprises synthetic polymeric fibers, which can be equated to the Applicant's "first fibers", and the second surge management layer comprises hydrophilic fibers, which can be equated to the Applicant's "third fibers" (Abstract). The absorbent layer comprises a means for containing a high-absorbency material and a high-absorbency material (column 6, lines 51 – 54). In one preferred embodiment, the absorbent layer is formed from an air-laid mixture of wood pulp fluff

fibers, equated to the Applicant's "second fibers", and a high-absorbency material, equated to the Applicant's "absorbent material" (column 10, lines 19 – 24).

Wanek fails to disclose a first transition zone comprising fibers from the "first and second strata" and a second transition zone comprising fibers from the "second and third strata" commingled substantially uniformly across the composite's width and along the composite's length.

Pieniak discloses an absorbent article that has two layers bonded together by commingling of fibers. Pieniak teaches that this type of fiber commingling promotes the wicking of fluid into the absorbent structure (Abstract). It is not stated explicitly by Pieniak but it is recognized in the art that this type of fiber commingling also adds structural integrity to the bonded layers and helps resist delamination of the two layers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to commingle, or entangle, the fibers of the first surge management layer with the fibers of the second surge management layer of Wanek et al. as claimed so that the layers have more structural integrity as well as providing enhanced wicking of fluids as disclosed by Pieniak. The resulting composite will be unitary as claimed.

As to claims 2 - 13, 25, 32, 33, and 53, Wanek teaches the use of synthetic, matrix and resilient fibers in the three layers.

Wanek teaches that the "first fibers" of the first surge management layer, or "first stratum", can be "synthetic fibers" such as polyolefins (polypropylene, polypropylene and the like), polyesters (polyethylene terephthalate and the like), polyamides (nylon 6, nylon 6,6,

poly(iminocarboxylpentamethylene) and the like), acrylics, and modified cellulose material, such as cellulose acetate (column 3, lines 25 – 39). The first fibers can also be "resilient fibers" such as "synthetic fibers". In addition, the first surge management layer may contain from about 90 to 0 weight percent of a nonsynthetic fiber, or "matrix fibers", such as wood pulp fluff, cotton linters, cotton and the like (column 4, lines 29 – 33).

Wanek teaches that the "second fibers" of the absorbent layer, or "second stratum", can be "matrix fibers" such as cellulose fibers like carboxymethyl cellulose and hydroxypropyl cellulose (column 7, lines 10 – 15) and "resilient fibers" such as synthetic fibers like polyvinyl alcohol (column 7, line 11) and chemically stiffened fibers like carboxymethyl cellulose and hydroxypropyl cellulose which are lightly crosslinked to render the materials substantially water insoluble (column 7, lines 19 – 22).

Wanek teaches that the "third fibers" of the second surge management layer, or "third stratum", can contain "synthetic fibers" such as nylon copolymers like poly(pentamethylenecarbonamide) (nylon-6)/polyethylene oxide (column 4, lines 34 – 37), "matrix fibers" such as cellulosic fibers like wood pulp fluff, cotton linters and rayon (column 5, line 34), and "resilient fibers" such as the synthetic fibers.

As to claims 14 - 16, Wanek teaches that the first and second surge management layers, or "first and third strata", may be bonded with thermoplastic fibers such as bicomponent fibers (column 3, lines 61 – 67 and column 4, lines 1 – 5).

As to claim 19, Wanek teaches that the absorbent layer, or "second stratum", comprises a high-absorbency material such as synthetic hydrogel polymers (column 7, lines 1 – 15).

As to claims 20 and 24, Wanek teaches that the first surge management layer, or "first stratum", has a basis weight of from about 20 to 200 grams per square meter (column 5, lines 21 – 24).

As to claims 21 - 24, Wanek teaches that the first surge management layer, or "first stratum", can comprise polyester such as polyethylene terephthalate (column 3, line 35) and a binder material such as a bicomponent fiber having a polyethylene sheath and a polypropylene core. The polyethylene terephthalate and bicomponent fibers may be combined in a weight ratio of from 1:99 to 99:1 (column 4, lines 6 – 23).

As to claims 34 - 35, Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954) discloses the claimed invention except for that wood pulp fibers are present in the stratum in the amount from about 30 – 80% by weight as required by claim 34 and 20 to 70% by weight as required by claim 35 based on the total weight of fibers in the stratum. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have about that wood pulp fibers are present in the stratum in the amount from about 30 – 80% by weight as required by claim 34 and 20 to 70% by weight as required by claim 35 based on the total weight of fibers in the stratum since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill

in the art. *In re Aller*, 105 USPQ 233. In the present invention, one would have been motivated to optimize the fluid retention capabilities of the first surge management layer.

As to claims 36 - 40, Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954) discloses the claimed invention except for that the second stratum comprises about 30% by weight wood pulp fibers and 70% by weight crosslinked cellulosic fibers as required by claim 36, 40% wood pulp fibers and 60% crosslinked cellulosic fibers as required by claim 37, 50% wood pulp fibers and 50% crosslinked cellulosic fibers as required by claim 38, 70% wood pulp fibers and 30% crosslinked cellulosic fibers as required by claim 39, and 75% wood pulp fibers and 25% crosslinked cellulosic fibers as required by claim 40. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the second stratum with the weight percentages of wood pulp fibers and crosslinked cellulosic fibers since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the combination of wood pulp fibers and crosslinked cellulosic fibers to have suitable fluid retention capabilities.

As to claims 41 – 47, Wanek teaches that the absorbent layer, or "second stratum", contains high absorbency material and a means for containing a high absorbency material. Wanek teaches that the absorbent layer contains 50 – 100 percent by weight high absorbency material and the remaining weight percentage is the means for containing the high absorbency material (column 6, lines 51 – 60). One example given of a means of containing high-absorbency

materials is a porous sponge-like material (column 6, lines 60 – 68). Sponges are known in the art to be absorbent materials, so the absorbent layer can contain any percentage of absorbent material.

As to claim 48, the second surge management layer, or "third stratum", has a basis weight in the range from about 20 – 200 grams per square meter (column 6, lines 25 – 29).

As to claims 49 - 50, Wanek teaches that the second surge management layer, or "third strata", may be bonded with thermoplastic fibers such as bicomponent fibers (column 3, lines 61 – 67 and column 4, lines 1 – 5) and can contain 90 to 0 weight percent of high wet modulus, preferably inherently hydrophobic fibers (column 6, lines 1 - 5). Polyethylene terephthalate is commonly known and used in the art as a hydrophobic fiber.

As to claim 51, Wanek et al. in view of Pieniak discloses the claimed invention except for the second surge management layer, or "third stratum", comprises about 10 – 30% by weight of bicomponent binding fibers based on the total weight of fibers in the stratum. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the second surge management layer, or "third strata", comprising about 10 – 30% by weight of bicomponent binding fibers based on the total weight of fibers in the stratum, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In

the present invention, one would have been motivated to optimize the amount of bicomponent binding fibers in the "third stratum" to create a properly integrated, durable nonwoven.

As to claim 52, Wanek discloses that the second surge management layer has a basis weight from about 20 – 200 grams per square meter (column 6, lines 25 – 29). However, Wanek et al. in view of Pieniak fails to disclose that the second surge management layer, or "third stratum", comprises about 80% by weight polyethylene terephthalate fibers and about 20% by weight bicomponent binding fibers based on the total weight of the fibers in the stratum. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the second surge management layer, or "third strata", comprising about 80% by weight polyethylene terephthalate fibers and about 20% by weight bicomponent binding fibers based on the total weight of the fibers in the stratum since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to create a proper balance of binding provided by the binding fibers and resistance to water provided by the polyethylene terephthalate.

As to claims 62 – 69 and 71, the claim limitations have been set forth above. It should be noted that the Examiner has given no patentable weight to "an absorbent article". Furthermore, it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

7. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954) and Win et al. (U.S. 5,677,635).

Wanek et al. in view of Pieniak teaches the claimed invention except that the binder can be a wet strength agent, specifically polyamide-epicholorohydrin resin.

Win et al. teaches a premoistened personal wipe comprising a wet strength agent. Win teaches that permanent wet strength agents will provide a more or less long-term wet resilience to the structure. The most widely-used materials for this purpose are the class of polymer known as polyamide-polyamine-epichlorohydrin type resins, which are also useful as bonding resins (column 2, line 45 – 67 and column 3, lines 1 – 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the polyamide-polyamine-epicholorohydrin resin of Win et al. as the binder in the composite of Wanek in view of Pieniak motivated by the expectation to maintain the integrity of the structure after being exposed to water over a period of time.

8. Claims 27 – 31, 55 – 61, 70 and 72 – 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954) and Graef et al. (US 5,225,047).

As to claims 26 and 54, Wanek in view of Pieniak teaches that the first surge management layer, or "first stratum", can comprise "matrix fibers" such as wood pulp fluff fibers, cotton linters, cotton and the like (column 4, lines 29 – 33). Wanek teaches that the

second surge management layer, or "third stratum", also can contain "matrix fibers" such as cellulosic fibers like wood pulp fluff, cotton linters and rayon (column 5, line 34).

However, Wanek in view of Pieniak fails to disclose that a portion of the matrix fibers such as the cotton or other cellulosic fibers in the first and second surge management layers are cross-linked cellulosic fibers.

Graef teaches that crosslinked cellulose fibers have advantages in disposable absorbent articles such as diapers when compared to normal untreated cellulose fibers. Graef discloses that crosslinked cellulose fibers provide greater bulk and will hold retained liquid better under compressive forces encountered during the use of the article. Crosslinked cellulose fibers will provide an improvement in performance when compared to untreated cellulose fibers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Wanek in view of Pieniak with crosslinked cellulose fibers for the "first stratum" and "third stratum" as disclosed by Graef so that increased bulk and improved retention of fluid under compression may be obtained.

As to claims 27, 29, 30 and 31, Wanek teaches that the first surge management layer may contain from about 90 to 0 weight percent of a nonsynthetic fiber, or "matrix fibers", such as wood pulp fluff, cotton linters, cotton and the like (column 4, lines 29 – 33).

As to claims 29, 30 and 31, Wanek teaches that the first surge management layer, or "first stratum", has a basis weight of from about 20 to 200 grams per square meter (column 5, lines 21 – 24).

As to claim 55, Wanek teaches that the second surge management layer, or "third stratum", contains 10 to 100 weight percent hydrophilic fibers such as wood pulp fluff (column 5, lines 29 – 67).

As to claims 28 – 31 and 56, Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954) and Graef et al. (US 5,225,047) discloses the claimed invention except for that the crosslinked fibers are present in the "first stratum" in the amount from about 20 - 80% by weight as required by claim 28, 60% by weight as required by claim 29 and 50% by weight as required by claims 30 and 31 based on the total weight of fibers in the stratum and the crosslinked fibers are present in the "third stratum" in the amount of 20 – 70% by weight as required by claim 56. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have about 20 to 80% by weight crosslinked fibers since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In the present invention, one would have been motivated to optimize the bulk and fluid retention capabilities of the first surge management layer.

As to claims 57 – 58, Wanek teaches that the second surge management layer, or "third stratum", has a basis weight of 20 to about 200 grams per square meter (column 6, lines 24 – 28).

As to claims 57 - 58, Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954) and Graef et al. (US 5,225,047) discloses the claimed invention except for that the third stratum

comprises about 50% wood pulp fibers and 50% crosslinked cellulosic fibers as required by claim 57 and 75% crosslinked cellulosic fibers and 25% wood pulp fibers as required by claim 58. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create the third stratum with the weight percentages of wood pulp fibers and crosslinked cellulosic fibers since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the combination of wood pulp fibers and crosslinked cellulosic fibers to have suitable fluid retention capabilities.

As to claims 59 - 61, the claim limitations have been set forth above.

As to claims 70, 72 and 73, the claim limitations have been set forth above. It should be noted that the Examiner has given no patentable weight to "an absorbent article". Furthermore, it has been held that a recitation with respect to the manner in which a claimed article is intended to be employed does not differentiate the claimed article from a prior art article satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

As to claims 78 – 79, Wanek et al. in view of Pieniak and Graef et al. discloses the claimed invention except that two of the three-layered composites as described above can be combined to form an absorbent contruct. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine two of the three-layered composites to

create an absorbent contruct since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. In the present invention, one would have been motivated to combine two of the three-layered to create a composite with greater structural stability and surface dryness.

9. Claims 74 - 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wanek et al. (U.S. 5,294,478) in view of Pieniak (U.S. 4,723,954), Graef et al. (U.S. 5,225,047) and Gilman et al. (U.S. 5,437,653).

Wanek et al. in view of Pieniak and Graef et al. teaches the above claimed invention but fails to disclose that the composite is folded into a C-shaped configuration.

Gilman et al. teaches a layered absorbent article which is C-folded. Gilman teaches that the C-fold enables the absorbent layer to flex, thereby allowing the absorbent layer to conform and stay in intimate contact with a wearer's body (column 6, lines 30- 47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to fold the composite of Wanek et al. in view of Pieniak and Graef et al. in a C-shaped configuration as suggested by Gilman et al. in order to minimize the likelihood of leakage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Jennifer Boyd
March 6, 2003